UNITED STATES DEPARTMENT OF THE INTERIOR
MINERALS MANAGEMENT SERVICE
ALASKA OCS REGION

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS LEASES IN THE ALASKA OUTER CONTINENTAL SHELF REGION

NTL 00-A03 Effective Date: February 7, 2000

ARCHAEOLOGICAL SURVEY AND EVALUATION FOR EXPLORATION AND DEVELOPMENT ACTIVITIES

Introduction

If the Regional Director of Minerals Management Service (MMS) Alaska Outer Continental Shelf (OCS) Region determines that an archaeological resource may exist in the lease area or pipeline right-of-way, we will notify the lessee/operator (you) in writing that an archaeological survey/report is required before petroleum exploration and development activities begin to ensure that significant archaeological sites will not be adversely affected.

This Notice to Lessees (NTL) provides guidance for archaeological surveys, evaluations, and reporting procedures for the Alaska OCS Region. It is issued to clarify and interpret requirements contained in regulations and does not impose additional requirements.

Potential submerged archaeological resources range from historic to prehistoric. Historic resources include man-made objects or structures, such as shipwrecks, submerged structures, and aircraft, older than 50 years. Potential sites for prehistoric archaeological resources include areas that are in water shallower than water depths that correspond to a submerged paleo-shoreline representing the low stand of sea level approximately 13,000 years before present in age or younger (generally 50 meters below sea level on the Alaska OCS). These sites include terrestrial landforms or stratigraphy with an age of 13,000 years before present or younger that we have determined as conforming to a high potential profile for past human habitation. This includes, but is not limited to, high ground near paleo-rivers, river confluences, paleo-shorelines, and preserved levees or terraces on paleo-channels. More information on archaeological resources may be found in the MMS Handbook for Archaeological Resource Protection, which is available upon request.

General Guidelines

The archaeological survey consists of a high-resolution geophysical survey. You may satisfy the general survey data requirements for the archaeological resources analysis in part, or in whole,

with data from high-resolution seismic surveys acquired under the provisions of Notice to Lessees (NTL) 00-A01 and NTL 00-A02 (shallow hazards and pipeline surveys). We recommend that you consult with appropriate MMS personnel before finalizing your survey strategy and plans.

Qualified and experienced personnel should perform the field survey, process and analyze data, prepare the report, and acknowledge responsibility for these activities by signing the appropriate data logs, analysis and reports.

A geophysicist should be present to ensure that the equipment is properly tuned and data are accurate and of sufficient quality. The survey geophysicist should evaluate the data to determine if any anomalies warrant collection of additional survey data. However, when other available information cannot explain anomalies that will be affected by operations, it may be necessary to acquire additional survey data and/or appraisal by a qualified marine archaeologist.

You should conduct the activities described in this notice according to all applicable laws, regulations, rules, and lease stipulations, including the Marine Mammal Protection Act of 1972 as amended and the Endangered Species Act of 1973 as amended.

We are aware that seasonal constraints for operating in the arctic OCS often make timing for collection, processing, interpreting, and submitting data difficult. However, surveys need to be conducted and information provided to us for review sufficiently in advance of drilling, platform construction, or rig set-down operations.

Notification

You should notify other potentially affected OCS users before conducting this survey and you must satisfy any lease stipulations or mitigating measures in effect--in the Beaufort Sea this includes Lease Sale 170 stipulations and Information to Lessees notice regarding coordination with subsistence communities. You should notify us a minimum of 2 weeks before starting any survey operations. In addition, you or your contractor should notify us at least 72 hours before mobilizing this survey so that an MMS observer may make arrangements to be present.

Archaeological Survey Requirements

You are responsible for obtaining the best possible results using the most appropriate survey technology. Poor quality data due to acquisition or processing technique is not acceptable and may result in a resurvey. All seismic systems should be integrated with ships navigation resulting in accurate posting of fixed points on seismic lines.

When we require an archaeological investigation in a leased area or pipeline right-of-way, your primary analysis will utilize a survey that may include the following:

1) Program Design

Archaeological surveys for site clearance should provide detailed coverage, usually to a distance of at least 1,200 meters (m) in all directions from the proposed activity. Grid spacing for profiles is generally 300 m by 1,200 m or less. For side scan sonar use a grid spacing that ensures 150 percent coverage of the area of proposed activity.

Archaeological surveys for pipeline rights-of-way generally consists of five (5) approximately parallel lines where one line is coincident with the proposed pipeline route, and which cover an area 300 m on either side of the center line. The grid should provide 150 percent coverage of the sea floor on side scan sonar data. Tie-lines perpendicular to the center-line, should be acquired at intervals of every 1,200 m or closer. A variance from the five (5) line spread may be desirable or necessary depending on specific conditions, pipe-lay methods, and design considerations.

For magnetometer, use a grid spacing consisting of parallel survey lines spaced 150 m apart and five perpendicular tie-lines spaced 400 m apart centered on or along the site of the proposed activity. We will consider variations in the grid pattern for larger areas or pipeline rights-of-way such as 150 m apart in one direction and perpendicular tie-lines spaced 1,000 m apart.

2) Sea Floor Imagery

Use side-scan sonographs of the sea floor to identify sea floor features and objects and areas of potential archaeological resources. Recordings should be of optimal quality (good resolution, minimal distortion) resulting in displays automatically corrected for slant range, lay-back and vessel speed, and provide 150 percent coverage of the seafloor in the survey area affected by the proposed operations. Mosaics constructed from polar scanning sonar will be considered for through-the-ice operations. Data you obtain should be of such quality to permit detection and evaluation of seafloor objects and features within the survey area. We will accept information from a shallow hazards survey if coverage is adequate.

3) Bathymetry

Fathometer data should consist of high frequency (12 kHz or higher) continuous sea floor profiles with a resolution of 10 cm or better. We will accept information from a shallow hazards survey if coverage is adequate.

4) Acoustic Subbottom Profilers

Record high-frequency data to provide penetration through Holocene and Late Pleistocene sediments or to a depth of 30 m below the sea floor with a resolution of 1 millisecond (ms). In addition, employ a 3.5 or 7 kilohertz piezoelectric sediment profiler or equivalent system to penetrate soft sediments. We will accept information from a shallow hazards survey if coverage is adequate.

5) Magnetometer

Use this tool if the potential archaeological resources to be investigated are such that they may be detected by a magnetometer survey. Techniques you employ should detect and aid in the identification of ferrous or ferric or other objects having a distinct magnetic signature. If necessary, use depressed towing to achieve desired resolution. You may also need an auxiliary recording of sensor depth or its height above the sea floor. Sensitivity is normally 1 gamma. Noise level should not exceed $\pm$ 3 gammas. We will accept information from a shallow hazards survey if coverage is adequate.

Compensate all geophysical systems for wave heave if you undertake operations in sea state of greater than Beaufort Code 2.

6) Navigation

Use a navigational positioning system with an accuracy of $\pm$ 2 m (6 feet). Vessel track should not vary more than $\pm$15 m (49 feet) from pre-plot line, except to avoid obstructions. All fix-marks should be easily identified on post-plots. All seismic systems should be integrated with ships navigation resulting in accurate posting of fixed points on seismic lines.

7) Shallow Core Data

Shallow cores collected for engineering and geotechnical investigations may be utilized to analyze archaeological resources. In some cases you may find it desirable to perform additional analysis of cores such as carbon age-dating of organic material.

8) Additional Systems Options

You may use additional optional equipment and techniques (i.e., visual investigations, remotely operated vehicle investigations, non-acoustic imaging, etc.) to delineate and confirm or negate the presence of archaeological resources.

Data Preparation

Submit paper copies of data in optimal quality and Z-folded with identification labels or headers exposed to facilitate ease of handling during interpretation. Annotate data records with fix marks at 100 m or other appropriate intervals and with all scale parameters and changes during recording including start and stop information and shot points. You should display paper records with consistent orientation; such as west to the left and north to the left. Annotate line crossings and corresponding shot-points on the records. Do not make interpretative markings on the data portion of the original records or copies you submit.

a. One paper print of all profiles and recordings acquired.

b. Tapes, disks, or CDs of raw and processed digital data.

c. Original magnetometer records, when required.

d. Side-scan sonar records in paper copies. If copies are not of adequate quality to delineate sea bottom conditions, you may need to submit original records at the time of the application. Original records and copies of digital records should be available to us after data is submitted for site clearance.

e. Digital navigation data of the survey area on tape, disk, or CD.

Survey Report Format and Content

Submit two copies of the archaeological resource survey report to the Regional Supervisor, Field Operations Office. The narrative report should summarize survey instrumentation, procedures, ocean conditions, interpretation of the results, and evaluation of the archaeological significance of any anomalies revealed by the survey. The survey geophysicist, and/or a qualified marine archeologist as stipulated above, should sign the report.

The report should include at a minimum the following:

1. Page-size map showing the survey area(s) in relation to the proposed activity and the geographic area indicating lease and block numbers.

2. Post plot/Base map at 1:10,000 scale showing vessel track lines and navigational reference points using a NAD 83 projection with the appropriate X and Y UTM coordinates and latitude-longitude reference points. Include shallow geotechnical borings locations if available.

3. Map at 1:10,000 scale of bathymetry contoured in intervals of 2 m or less, or in a way not to impair legibility of the map if closely spaced.

4. Isopach map at 1:10,000 scale showing thickness and distribution of unconsolidated sediments, when present, contoured in internals of 2 m or less, or in a way not to impair legibility of the map. Includes the location of geotechnical borings and samples.

5. Map(s) at 1:10,000 scale indicating anomalies in relation to the proposed site(s).

6. The side-scan sonar records, magnetic profile data, and subbottom profile data with an interpretation of the area at and near the proposed drill site(s).

7. If additional survey (i.e., photo, television, diver observation, age-date analysis of cores, etc.) was necessary, a general narrative summary of this information should be included. In all cases where an anomaly is encountered, you should submit the original of all survey data for the line(s) indicating the anomaly.

8. Cross-section showing interpreted regional setting and features with soil classification and as appropriate or available, graphic soil logs, and geotechnical boring profiles to an appropriate scale.

9. A written assessment of the possible existence of archaeological resources should be provided. This may include an analysis of sea level history, water depths, submerged landforms, seismic and shallow core stratigraphy, relative and radiocarbon sequence dating, description and *analysis of anomalies, and review of relevant onshore and regional archaeology.*

10. Provide navigation data for the survey on tape or digital diskette/CDROM. This may be covered in the hazards survey requirements.

11. To help develop of our regional database we request, for digitally produced maps above, that you provide copies in Arc/Info Export file format as unprojected data in latitude, longitude, and decimal degrees.

Results and Mitigation

When MMS or an appropriate agency designates an area of potential archaeological significance and the survey indicates a potential site(s) in the area of the proposed activity, you have three alternatives:

1. Employ operational procedures to ensure the protection of the potential site(s).

2. Adjust the location at a distance necessary to prevent disturbance of, or to avoid, the potential site(s).

3. Perform additional investigations to establish to our satisfaction that archaeological resources do not exist or will not be adversely affected by operations.

Authority

This notice is issued under authority of the Code of Federal Regulations at 30 CFR 250.194 (formerly 250.126), (Archaeological Reports and Surveys); 30 CFR 250.201 (Preliminary Activities); 30 CFR 250.203 (Exploration Plan); 30 CFR 250.204 (Development and Production Plan); 30 CFR 250.414 (Applications for Permit to Drill) 30 CFR 250.1007(a)(5) (Pipeline Applications); and 30 CFR 250.1009 (General Requirements for a Pipeline Right-of-Way Grant).

According to 30 CFR 250.196 (formerly 250.118), we may release to the public all high resolution seismic data 60 days after you submit it to us.

Paperwork Reduction Act of 1995 (PRA) Statement: The collection of information referred to in this NTL is required in 30 CFR part 250, subparts A, B, D, and J; and 30 CFR part 251. The Office of Management and Budget (OMB) approved the information collection requirements in these regulations and assigned OMB control numbers 1010-0114 for subpart A; 1010-0049 for subpart B; 1010-0053 for subpart D; 1010-0044 for Form MMS-123, Application for Permit to Drill; 1010-0050 for subpart J, and 1010-0048 for part 251. This NTL does not impose additional information collection requirements subject to the PRA.

If you have any questions, please contact Jeffrey Walker at (907) 271-6190 or jeffrey.walker@mms.gov.

Acting RSF

Jeffrey Walker
Regional Supervisor
Field Operations Office

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Date